

A camera which is said to take fifty photographs per second is a French novelty.

Among the newest physical training implements is a small tread-mill for leg exercise.

A European clockmaker has invented a clock that will run for ten years without winding.

A substitute for rubber has been found in the sap of the kauri or butter tree of Africa.

Large quantities have been discovered in British Columbia, near the head of the Tete Jaune Pass.

A recent invention is a candle which rocks by clockwork mechanism and at the same time plays baby tunes.

Sun spots 100,000 miles in diameter have been measured, large enough to hold dozens of such worlds as ours.

About two hundred dogs are used every year by the University of Buffalo for purposes of physiological experiment.

Scales are now made that will weigh the flame of a candle or the smallest strand of hair plucked from the eyebrow.

A rivet, in the form of a tube, to be used both as a rivet and as a drainage way, is a late work in iron-shed building.

Indicators for steam engines are now made of aluminum, since its light weight makes it very advantageous for this purpose.

A New England man has invented a railway-car brake, operated by electricity, which is claimed to be as effective as the air-brake.

At Cherbourg, in France, an electrical canoe is in successful operation. It will run for twelve hours at the rate of nearly eight knots an hour.

A new electric invalid chair has storage batteries under the seat. It can run at the rate of eight miles an hour and will last for fifty miles.

Professor G. F. Wright claims to have discovered a former outlet of the Great Lakes through Lake Nipissing and the Matawa river to the Ottawa.

A fire engine that does away with the use of horses and forces the water by means of power generated by a storage battery, is a recent electrical invention.

A wired car in Pittsburgh, fitted with steel-ball bearings as an experiment, has been run for several months without being oiled since it was first put in service.

There has been invented a machine for cutting tubes of paper for pill boxes. The operations are all automatic and the work is said to be rapidly performed.

Cable dispatches are generally received at the rate of twenty to twenty-five words a minute. An expert operator on a land line sends about forty words in that time.

Piston valves are taking the place of slide valves in locomotives. By this device, builders expect, with a perfect rod, to ultimately attain a speed of 100 miles per hour.

Aluminum tobacco pipes are about the latest invention. The bowl is, however, lined with silver; but the pipes are said to be lighter than those of the same size made of brass-rod.

A recent application of aluminum to the frames of eye-glasses has attracted some attention. The weight of the frame is almost imperceptible, yet the lenses are softer than without rims.

Coloring aluminum has, it is said, been successfully achieved by Mr. W. E. Wier of Berlin. According to the process aluminum can be easily coated with other metals—nickel, silver and gold.

An improved process of extracting silver from its ores has been invented by a Chilean. It is especially applicable for ores containing copper. The new method is based on the solubility which it has for other metals.

A recent invention is a new type of refrigerator car that can be run for twenty days without re-icing. It is charged with ice and certain chemicals, the combination maintaining a freezing temperature during this long period.

The Government has been recently installing electric stamp-cancelling machines, having a capacity of 3,000 letters per hour, in all the post offices of consequence in the country wherever electric currents could be conveniently obtained.

Paper-mache is finding more extended use for sunken panels and relief ornaments, as well as for figures in the round. Its comparative lightness being a highly appreciative quality. It admits of a most beautiful finish, at point strongly in its favor.

We are accustomed to think of metals as combustible; but the contrary is the case. With the exception of the so-called noble metals—gold, silver, platinum and a few others—all metals burn, or absorb oxygen when heated sufficiently in the air.

An electric engine has been designed for ordinary passenger traffic on a subway line in London which admits of its motion being reversed when the train is at a standstill. It operates on a central-rail system, and many economical advantages are claimed for it.

Pitch-pine beams will shrink in thickness from 18 inches to 12; spruce, from 8 inches to 8; white pine from 12 inches to 11; yellow pine, a trifle less. Cedar beams will shrink from a width of 14 inches to 13 1/2; elm, from 11 to 10; and oak, from 12 to 11 1/2.

The results of recent experiments made in Berlin by Professor Uffmann show that cholera bacilli remain alive in water from ten to fifteen days, in water in a cask three days, on postal cards twenty hours after drying, while on silver coins and copper they die in half an hour.

The *Union Medica* gives a short account of the *Plasmodium fuscum*, a fungus that takes its specific name from its property of glowing in the dark, even for twenty-four hours after it has been plucked. It has lately been carried to Europe from Tahiti, where the women use it as an adornment in bouquets of flowers.

Sea fowl's eggs have a remarkable peculiarity, they are nearly conical in form, broad at the base and sharp at the point, so that they will only roll in a circle. They are laid on the bare edges of high rocks, from which they would almost surely roll off save for this happy provision of nature.

Nickel is a modern metal. It was not in use nor known till 1775. It has now largely taken the place of silver in plated ware, and as an alloy with steel it is superior to any other metal, for it is not only non-corrosive itself, but it transfers the same quality to steel even when combined as low as 5 per cent, it prevents oxidation.

The latest novel in the use of electricity has been devised in Ottawa. The electric current is utilized for the abstraction of heat from cast-iron blocks, until their temperature is reduced below the freezing point. The blocks are then used as substitutes for ice. The cost of refrigeration by this method is said to compare favorably with the cost for natural or manufactured ice.

Paper was employed in many new ways during the past twelve months. Among the first crop of the paper's inventions was a form of belting made of paper, an arrangement that is said to possess some valuable features. Paper tubes for insulating purposes have won a place in the electrical world, while purified paper for matches is a notable Swedish invention.

If a pound of coal is subjected to a dry distillation and the product and residuals treated chemically by the processes for obtaining the well-known coal tar colors, say the *Age of St. Louis*, "the one pound so treated

will yield enough magenta to color 500 yards of flannel, vermilion for 2,500 yards, aurine for 120 yards and alizarine sufficient for 155 yards of red cloth."

Aluminum horse-shoes have been tried in one of the Finnish cavalry regiments. A number of horses were shod on one fore-foot and one hind-foot with this metal, ordinary iron shoes being used on the other feet. At the end of six weeks, during which time the animals had been moving on a hard and stony road, it was found that the aluminum shoes had worn rather better than those of iron.

Le Yacht states that a French yachtman, M. le Comte de Chabannes La Palice, has arranged to have a 10-ton yacht built of aluminum by the Société des Chantiers de la Loire. The yacht had been built, at most vessels of her class, with steel frame and wood on planks, her hull would weigh 4,500 kilos, but the employment of aluminum reduces this to 2,500. This will be the first sea-going vessel built of the new material.

The Berlin correspondent of the London *Standard* tells "of a new invention which claims absolutely to do away with smoke from the combustion of coal. It has the great merit of simplicity. The coal is ground into powder and injected into the boiler by means of a current of air, which it immediately becomes ignited from a small fire near the mouth. Other currents supply the air necessary for combustion. The dust burns in one continuous intense flame, and not as a smoky escape as smoke."

"No living germ of disease can resist the antiseptic power of essence of cinnamon for more than a few hours," is the conclusion announced by M. Chamberland as the result of prolonged research and experiment in M. Pasteur's laboratory. It is said to destroy microbes as effectively, if not as rapidly, as corrosive sublimate. Even the scent of it is fatal to microbes, and M. Chamberland says a decoction of cinnamon should be taken freely by persons living in places infected by typhoid or cholera.

Adolphus Hamann and Augustus Wahl, two German clock makers, have just finished the most wonderful of all clocks, an astronomical and horological oddity that throws all previous efforts "in the shade." It shows the seconds and strikes the hours, quarters and minutes, besides giving a calendar of days, weeks, months and years up to the year 10,000. It also shows the solar system, the phases of the moon, the revolutions of the earth and the zodiac, besides giving on its seventeen faces the correct time for Berlin, Prague, Munich, Rome, New York, Geneva, Boston, Paris, Metz, London, and all the large cities in the world.

It is a fact well established by students of heredity that children are apt to inherit not only the physical, mental and moral traits of their parents, but to be influenced by their age as well. Children born of very young fathers and mothers never attain so vigorous a growth of mind or body as those of older men and women, while children of old people are born old. One of the most surprising cases in medical history is that of Margaret Clibborn, who died in 1765, aged one hundred and eighty years. When twenty-four she was married to a man aged one hundred and five. Three children came of this union, but they had gray hair, no teeth, were stooped, yellow and wrinkled, decrepit in movement and could eat only bread and vegetables.

The famous Iron Gates of the Danube river, which had long been a bar to the development of the commerce along that famous waterway, were successfully removed last year. The great Tassau dam, which is said to be the largest piece of engineering work in the world, was also completed during the last year. It is situated thirty-five miles north of Bombay and is two miles long, with a breast 118 feet high and 100 feet thick at the base. Twelve thousand men were continuously employed in the construction of this colossal work. Somewhat less imposing, but an engineering work of greater importance, was the completion of the Wynnum aqueduct to supply Liverpool with water. The aqueduct is sixty-eight miles in length, and at one place dips under the Mersey river in a tunnel that is said to be a marvel of engineering skill.

The storage battery has been perfected sufficiently to admit of its use in European cities, and the time cannot be very remote when it will be brought to the point when it will satisfy the requirements of American towns and cities. Its introduction on this side of the Atlantic will, however, render antiquated an enormous electrical plant, constructed at high cost. The electrical manufacturing companies will find themselves obliged to largely revolutionize the character of their business, an outlook from which they derive very little satisfaction. The change among them has been perfected.

It is letting a man to own knowledge of solar physics. The longest total eclipse of this century was four minutes forty-six seconds, and as the path of the moon's shadow lies to a great extent on land, there was considerable choice of stations with long durations of totality. Two expeditions were sent from England; one to Africa, the other to Brazil, the expenses being defrayed by the Royal Society. The United States sent an expedition to Chile. The Bureau des Longitudes, Paris, sent a complete expedition to Java, in Africa. At present we have not heard of any Italian expedition, but it is hoped that Professor Tacchini was able to make arrangements to observe the eclipse.

The curing of idiocy by the surgeon's science is another and most wonderful advance by the profession. It has been found that a frequent cause of imbecility is the failure of the skull to expand with the growth of the brain in the infant. In infancy the skull is to be perfect, must fall to solidity at those joints or natural sutures that separate its originally solid parts. These soft places turn too early into bone like the rest of the skull and the brain cannot expand. The surgeons of to-day restore nature to its power to act as it should by re-opening the skull either at its natural joints or by cutting out a part of it on either side. Almost directly in a few days the entire behavior of the child alters, and it begins to display intelligence. The development of the brain, no longer arrested, seems almost instantly to take advantage of its liberty. Thus idiots, for ages doomed to be a care and a sorrow to parents and to the world, are transformed into men and women of like intelligence to our own.

CHINA COAST METEOROLOGICAL REGISTER.

22nd June, 1893.—At 4 p.m.									
STATION.	Barometer.	Thermometer.	Humidity.	Wind.	Force.	Direction.	State of Sky.	Sea.	Remarks.
Tokyo	30.15	64.8	85	SW	1	Light	Cloudy	Cal	
Nagasaki	30.15	64.8	85	SW	1	Light	Cloudy	Cal	
Kobe	30.15	64.8	85	SW	1	Light	Cloudy	Cal	
Yokohama	30.15	64.8	85	SW	1	Light	Cloudy	Cal	
Manila	30.15	64.8	85	SW	1	Light	Cloudy	Cal	
Cebu	30.15	64.8	85	SW	1	Light	Cloudy	Cal	
Shanghai	30.15	64.8	85	SW	1	Light	Cloudy	Cal	
Amoy	30.15	64.8	85	SW	1	Light	Cloudy	Cal	
Swatow	30.15	64.8	85	SW	1	Light	Cloudy	Cal	
Shantou	30.15	64.8	85	SW	1	Light	Cloudy	Cal	
Keelung	30.15	64.8	85	SW	1	Light	Cloudy	Cal	
Keelung	30.15	64.8	85	SW	1	Light	Cloudy	Cal	
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Keelung	30.15	64.8	85	SW	1	Light	Cloudy	Cal	
Keelung	30.15	64.8	85	SW	1	Light	Cloudy	Cal	
Keelung	30.15	64.8	85	SW	1	Light	Cloudy	Cal	

23rd June, 1893.—At 10 a.m.									
STATION.	Barometer.	Thermometer.	Humidity.	Wind.	Force.	Direction.	State of Sky.	Sea.	Remarks.
Tokyo	30.15	64.8	85	SW	1	Light	Cloudy	Cal	
Nagasaki	30.15	64.8	85	SW	1	Light	Cloudy	Cal	
Kobe	30.15	64.8	85	SW	1	Light	Cloudy	Cal	
Yokohama	30.15	64.8	85	SW	1	Light	Cloudy	Cal	
Manila	30.15	64.8	85	SW	1	Light	Cloudy	Cal	
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Keelung	30.15	64.8	85	SW	1	Light	Cloudy	Cal	
Keelung	30.15	64.8	85	SW	1	Light	Cloudy	Cal	
Keelung	30.15	64.8	85	SW	1	Light	Cloudy	Cal	
Keelung	30.15	64.8	85	SW	1	Light	Cloudy	Cal	

23rd, 10.45 a.m.: "Slight depression in Gulf of Tongking," 10.45 a.m. Barometer falling slightly. Gradients moderate for southeast winds. Sea moderate. Weather, showery and squally.

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